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ME-303

(Following Paper ID and Roll No. to be filled in your Answer Book)

Paper ID :140313

Roll No.

B. Tech.

(SEM. III) THEORY EXAMINATION, 2015-16

MATERIAL SCIENCE IN ENGINEERING

[Time:3 hours]

[Total Marks:100]

Note : Attempt all 3 sections.

## Section-A

1. Attempt **all** parts. All parts carry equal marks. Write answer of each part in short. (2x10=20)
- (a) What do you mean by diffusion ?
  - (b) Write two examples of thermoplastic.
  - (c) Write composition of solder.
  - (d) What do you mean by true stress ?
  - (e) What is difference between iron and steel ?
  - (f) What do you mean by unit cell ?

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- (g) Define the term fatigue.
- (h) What do you mean by SS and HSS ?
- (i) Which is the purest form of iron ?
- (j) What do you mean by yielding of a material ?

#### Section-B

Attempt **any five** questions from this section. (10x5= 50)

- 2. What do you mean by Creep? Also explain Phases and mechanism.
- 3. Differentiate between Amorphous and crystalline material.
- 4. Write the classification of NDT and explain LPT.
- 5. Define Ceramics and classify it. Write the properties of ceramics.
- 6. What are hard and soft magnetic materials? Explain with reference to hysteresis loop.
- 7. Write short notes on Thermosetting plastic with examples.

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- 8. What do you mean by hardness ? Classify different types of hardness measuring methods and explain any one.
- 9. Explain the following terms :

- (i) Toughness
- (ii) Brittle material
- (iii) Compaction

#### Section-C

Attempt **any two** questions from this section. (15x2=30)

- 10. Explain iron carbon diagram with a neat sketch.
- 11. Draw the neat sketch of TTT diagram for eutectoid steel and label the regions.
- 12. Explain stress - strain diagram for mild steel and cast iron with neat sketch.

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